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Original Article

PROFITABILITY OF SOYBEAN PRODUCTION BY SMALL HOLDER FARMERS IN NIGERIA: IMPACT OF AN AGRICULTURAL PROGRAMME ZAMFARA STATE, NIGERIA

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ABSTRACT

The study assessed the costs and returns in soybean production among small -scale farmers an impact of the Zamfara comprehensive agricultural revolution program (ZACAREP) in the Zamfara state of Nigeria. The multi-stage sampling procedure was used to select 600 soybean farmers. Four Local Governments, namely: Bungudu, Maru, Gusau, and Tsafe were purposively selected out of the fourteen local government areas of the state, because of their high concentration of soybean production. Respondents were then randomly selected from each of the local government, based on the proportion of each local government's soybean farming population that provide data for the analysis Data were collected from the respondents through the administration of well -structured questionnaire. The data collected were analyzed using simple descriptive statistics, gross margin analysis. There was a significant difference between participation on cost; (₦66978.9) and a non-participation farmers (₦36,232.7), while the return indicated ₦146, 221.1 and ₦41,337.9. Due to technologies adoption, the participating farmers' average yield was 1601 – 1800kg per hectare and non-participating farmer was 1201 – 1400kg per hectare. The major constraints were high cost and late supply of inputs, lack of access to loan by women and few female extension agents. It is recommended that government should; strengthened technology advocacy to increase farmers participation in the programme. Empower farmers with the skills essential for agricultural activities and frequency of contact between extension staff and farmers should be explored to make efficient and effective service delivery.

KEYWORDS: Adoption, Constraints, Profitability, Soybean Production & Smallholder Farmers

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INTRODUCTION

Background of the Study

Despite Nigeria's rich agricultural resource endowment, however, the agricultural sector has been growing at a very low rate. Less than 50% of the Country's cultivable agricultural land are under cultivation. Even then, smallholder and traditional farmers are constrained by many problems (Manyong*et al.*, 2006) Hartmann 'Agriculture remains the dominant sector in the rural areas of Nigeria. It provides employment for about 60% of the workforce. The diversity of climatic conditions, the richness of soil types and water sources, and the high population density provides great potentials for a crop, animal, fish, and tree production'. However, the majority of smallholder farmers relies on traditional methods of production and this has lowered the level of productivity. For instance Over 70% of the maize production in the majority of developing countries is from smallholders who use traditional methods of production (Muzari*et al.*, 2012). These farmers generally obtain very low crop yields because the local varieties used by farmers have low potential yield, most of the crops are grown under rain-fed conditions

and irrigation is used only in limited areas, little or no fertilizers are used and pest control is not adequate (Muzari*et al.*, 2012)

Similarly, Zamfara state whose slogan is "farming is our pride" has an estimated population of 2,938,769 (NPC 2003). About 82% of the population live in the rural areas and depend on agriculture to varying degrees for their live hood. There are 450,000 farms families in the state, most of whom are smallscale farmers having less than 2 hectares of land (ZADP 2009) pointed out that Zamfara State Agricultural sector is characterized by high post -harvest losses, inadequately available technologies in appropriate storage systems and poor access to market while agriculture which employs the majority of the populace is largely undeveloped and not very profitable. For a smallscale farmer, poverty in the state is widespread, severe and deep as evidenced by such indicator as nutrition, illiteracy, health and life expectancy.

It is in light of these and having realized that the answer to the state Government struggle is to provide sufficient food, and cash to the peasant farmers. This is what led to the creation of Zamfara comprehensive Agricultural Revolution Program(ZACAREP) which was created in March 2004 under Yarima vision 2007, with the following objectives.

- Improve the productivity of agriculture with particular attention to small scale poor resource farmers.
- Ensure food security for the farmers and increasing the access of farmers to adequate food and nutrition.
- Integrate the rural farmers into the market through market access (linkage).
- Use the multiplier effect of agricultural growth to improve the economy and uplift the living standard of the farmers.
- The program is designed to intervene thus;

1. Through the farmer's group/association

2. The focus on the adoption of bottom up participatory approach (ZASIDEP, 2004).

ZACAREP Technology disseminated to farmers' includes improved crop production, processing, group/association formation and management, marketing etc, ZASIDEP (2004) The crops shall among others include maize, rice, sorghum, millet, groundnut, cowpea, sesame, soya bean, and cotton for wetseason and wheat, vegetables, cowpea, and green maize for dryseason.

Bush and Garba, (2012) Zamfara is a zone primarily agricultural, supporting a wide variety of dry land, crops including millet, sorghum, maize, cowpeas, and groundnuts, as well as rice and (increasingly) soybeans. Some market vegetables are also grown during the dry season on low lying flood plains (i.e., fadama). In the selected village from Maru in the southern part of the state, root crops such as sweet potato, cocoyam, and cassava are also grown.

Soybean crop has replaced cotton and groundnuts as a cash crop production (Bush and Garba, 2012). Revealed that, Four main issues have affected crop production; the first is Climatic conditions had affected particular, traditional sorghum production due to heavy wind and rain at harvest time. Secondly, poor harvest, due to availability of chemical fertilizer, the subsidy has been slowly phased out, leading to a rise in fertilizer prices and declining use, which 80 percent of farmers used together with organic fertilizer. The third factor,low international prices, which have affected cotton production in particular, Prices are low enough for farmers consider shifting to soybeans as a replacement cash crop. Fourth factors, farmers in the zone are increasingly planting soybeans to replace ground nuts as a cash crop because of two

advantages at present. The current selling price of soybean favors producers and the crop also do not need much fertilizer. This makes it an attractive crop even for poor households.

According to James and John (2005) profitability is the ability of a given investment to earn a return from its use. However, the term 'Profitability' is not synonymous with the term 'Efficiency'. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Despite the numerous constraints faced by farmers in the production process, like the small size of farm holdings and the use of rudimentary inputs, studies of farming establishments across the country show that farming is generally a profitable enterprise for small -scale farmers. Profitability measures the ability of farmers to cover their costs and is an important concept because it provides incentives for entry into and longevity in the farming business. While many studies of Nigerian farms across the country report profitability, profit margins are often very small.

Profit maximization, a motivating factor of production, is one of the important goals of farm firms. An estimate of the profitability of every farm enterprise is always based on the cost-return analysis. This involves itemizing the costs and returns of production variables and using them to arrive at such estimates as the return to one unit of resources used, the gross margin as well as the net farm income. Profit generally is the difference between the total revenue and total costs (Olukosi and Ogungbile, 1989: Biam, 2013).

MATERIALS AND METHODS

The study was conducted in four of the fourteen Local Government Areas (LGAs) with the highest level of soybean production in Zamfara State. The selected LGAs were: Tsafe, Gusau, Maru and Bungudu. Zamfara State is located between latitude $10^0 40^1$N – $13^0 40^1$N and longitude $4^0 30^1$E – $7^0 06^1$E. The state has an estimated area of about 38,000km^2, about 50% of which is cultivated. It shares boundaries with Sokoto state and the republic of Niger to the north, Kebbi and Niger States to the west, Katsina State to the east, and Kaduna State of the South (ZMSG, 2001; ZSMG 2016).

Zamfara State is comprises of 14 Local Government Areas located within Savannah ecology, which can be divided into Sahel, Sudan and Northern Guinea Savannah. The Sahel vegetation is found in northernmost fringes near the border with the Republic of Niger. The climate is generally characterized by alternating dry and wet seasons. The rains usually commence in May/June and end in September/October. The effective rainy season in the study area is restricted to July to mid-September (Yakubu, 2005). Zamfara State from the population census of 2006 has the population figure of 3, 278, 87 (NPC, 2006). About 82% of the population live in rural areas and depend on agriculture for their livelihood. There are 450,000 farming families in the state, most of whom are small-scale farmers having less than 5 hectares of land. Majority of the farming families practiced mixed farming. The rain fed crops grown are millet, sorghum, rice, maize, cowpea, cotton and groundnut. During the dry season, farmers in the State produce mainly vegetable crops such as tomato, lettuce, carrot, onion, pepper and spinach (ZMSG, 2001; 2010; ZADP, 2012).

The population for the study comprised of all the soybean farmers in Zamfara state. Respondents were selected randomly from the list of farmers covered by ZACAREP. A total of 2034 were the list of registered farmers used as a sample frame out of which 600 were selected for the study at this stage, 29% was taken, as large sample is reasonable enough to give accurate data. The farmers composed of both participating farmers known in ZACAREP program as (target farmers) and non-participating farmers. Target farmers are those that contributed or paid some percentage of cash deposit for a total loan package to have access to inputs, training, soybean demonstration plot, extension service etc, while the non-

participating farmers, are farmers within the same registered association but registered as only members of the soybean farmers association.

The multistage random sampling technique was employed for the study. Gusau, Tsafe, Maru and Bungudu local government areas (LGAs) were purposefully selected for this study because of the good physical conditions of the soils and high concentration soybean farmers in the area. Four districts from each local government were selected randomly and three villages from each district. These districts included: Magmi, MayanaMada and Wonaka in Gusau LGA, Dansadau, Y/Galadima, Bingi, and Maru in Maru LGA, Tsafe, Chediya, Bilbis, and Keta in Tsafe LGA, Kwatarkwashi k/waje, k/mota and Bingi in Bungudu LGA.

The data collected were analyzed using descriptive statistics, gross margin analysis, profitability test and t-test. To assess the profitability of soybean production in the study area Farm budgeting was used to achieve objective II, Gross margin analysis was used to access the production of the participating and non-participating farmers in the ZACAREP for the various activities were compared using their gross-margin per hectare. The gross margin is obtained by subtracting the total variable costs (TVC) from the total value product (TVP) or (GR) (Erhabor and Kalu, 1993; Baim 2013). This is expressed as:

$$GM = TR - TVC \quad (1)$$

Where: GM- Gross margin/ha

TR- Total Revenue/ha

TVC- Total variable cost/ha

RESULTS AND DISCUSSIONS

Profitability Assessment of Soybean Production in the ZACAREP Program

Profit maximization, a motivating factor of production, is one of the important goals of farm firms. An estimate of the profitability of every farm enterprise is always based on the cost-return analysis. This involves itemizing the costs and returns of production variables and using them to arrive at such estimates as the return to one unit of resources used, the gross margin as well as the net farm income. Profit generally is the difference between the total revenue and total costs (Olukosi and Ogungbile, 1989; Biam, 2013). The Profitability Assessment of Soybean Production in the ZACAREP Program can be seen in Table in appendix the result shows t-test was used to compare the profitability of participating and non-participating farmers and that there was a significant difference between cost and return of the two groups of farmers, the major differences were on seeds, fertilizer, herbicides, insecticides, ploughing, harrowing, herbicides application, fertilizer application, harvesting. On the average participating farmer realized (₦146, 221.1) on soybean production while non- participating farmer realized (₦41, 337.9). The general significant difference was found between the categories of farmers on their gross sales, output cost and a return of the soybean production under ZACAREP program this may imply that improved extension practices lead to increased farm productivity. This agreed with the study conducted by Asres (2013) the result of his studies show that participation in the extension program leads to increased farm productivity by about 6%. However, to measure the benefit of participation in the program in terms of farm productivity, it is necessary to take into account the fact that, individuals those who participated might have produced higher production even if they had not participated.

Difference in Yield of Participating Farmers and Non-Participating Farmers

A table in the appendix shows the difference in yield of the participating farmers and non-participating farmers with the respect to technologies transferred by ZACAREP. The yield Class indicated that the average of (60.8%) of the participating farmers'obtained1601 – 1800kg per hectare, while non -participating farmers 68.4% yield Class obtained 1201 – 1400kg per hectare. The highest of 4.0% of the participating farmers of above 2200kg per hectare was obtained and non participating farmers30.4% 1401 – 1600kg per hectare was the highest obtained. The findings indicated that farmers who participated in an agricultural project are more like to benefit from production credit, improved extension activities thereby enhancing food security. This report is inconsistent with the report of Adeolu and Taiwo (2004) in their study of the impact of the National Fadama facility in alleviating rural poverty and enhancing agricultural development in South-Western Nigeria. Participation in the program had a significant influence on both yield and income of the participating farmers.

Level of Activities Covered/Production Technologies Used by Soybean Farmers covered under ZACAREP

Zamfara State Comprehensive Agricultural Revolutionary Programme (ZACAREP) which was performing the functions of the ADP illustrates how agricultural extension programme was used to enhance farmers' knowledge and skills, as well as promote and expand improved technologies that affect farm productivity (Auta and Dafwang,2010) The activities covered include seed used, seed treatment, chemical used for seed treatment, planting date, cropping system planting method, spacing, weed control, fertilizer application, type of fertilizer used, time of application, pest observed, types of damage by insect noticed at flowering, spray insect, and treat seed when stored. It was also recognized by Doss (2003; and Idrisa*et al.,* 2012), that one way of improving agricultural productivity, in particular, and rural livelihood in general, is through the introduction of improved agricultural technologies to farmers

Strategies Used to Transfer Soybean Technologies to Farmers

The result from the table in appendix examined the strategies used by ZACAREP to transfer technologies to the farmers with respect to extension agent contact, methods extension contact, massage discussed, seed source, training, demonstrations, etc, Extension agents are those that help farmers disseminate agricultural technologies through the use of extension methods whereby the extension agents interact with farmers' households. Thus, these tallies with ZASIDEP (2004) reported that technical facilitators demonstrated various farm activities with the target farmers on farms on crop production techniques, demonstrations and out growers, full agronomic practices were applied to improved farming practices.

Information Limitations on Soybean Production

Many constraints have been identified in this study to be related to the problems of Technologies adoption of ZACAREP Activities by farmers. Several soybean production technologies have been communicated by extension service agent and other informal sectors in the study area.

The table in the appendix shows the most of the limiting constraints of Technologies Information on the production of soybean which indicated that at some extent Non-availability of seeds, High cost of land, Poor soil fertility, Problem of pest, disease problem, and cost of buying pesticides/herbicides, recorded high percentage. The findings revealed that though effect of these factors individually are not of significant rate ,but cumulatively could lead to poor harvests, low profit and low participation in programs, this in line with Biam (2013) that Inadequate marketing and storage

facilities, soybean like most legumes, is prone to weevil attack when harvested, and this problem is complicated by inadequate storage facilities. Consequently, farmers are forced to sell at the same time harvest period leading to lower prices.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY

The profitability analysis in this study found that the cost and return of soybean on the basis of participating and non-participating farmers in the ZACAREP program showed the cost and the return of the farmers indicated that there are significant differences an average of participating farmer realized about N146, 221.1 on their average return on soybean. While the non-participating farmer realized about N41, 337.9. Generally, significant differences were found between the categories of farmers on their gross sales, output cost and a return of the soybean production under the program.

CONCLUSIONS

The study shows that the soybean farming had been widely covered by the program in the state and found to be profitable. The study had uncovered several motivational factors that led to farmers participation ,among others were, easy access to improved seeds, fertilizer, insecticide, herbicides, and marketing. The study revealed that there was a great increase in soybean production level and income due to theadoption of extension production technologies. These technologies are the use of improved seeds, planting methods, and efficient fertilizer used, spacing, weed control, spraying techniques, pest and disease control, recorded a high rate of awareness and adoption among soybean farmers in the study area**.**

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made: Soybean production attracts profit; farmers should be mobilized by the state government to participate to increase large scale production for foreign exchange earnings. Strengthen extension services to encourage to farmers with the skills essential to their agricultural activities in order increase high production. From the findings of the study, there are needs of the program to ensure links for the supply of good quality and reliable inputs to farmers such as seeds, inorganic fertilizer, insecticides, and herbicides.

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APPENDIX

Table 1: Distribution of Respondents by LGA and Villages

LGA	Sample Size	Number of Districts	Villages	Total
Bungudu	135	Bungudu Kwatarkoshi KuranMota KekunWaje	Gidan Dan Gwari Damba Kuga Tazame GidanJaki SabonGida Kango Rowan Mesa	11 11 11 11 12 11 11 11 11

			Kungurmi GidanSaro Bingi YarKatsina	11 11 11
Gusau	145	Mada Magami Mayana Wonaka	Mada FeginBaza Rowan Bore Kunkelai Zonai Tofa Kolo Yan Yashe Karal Lilo Ajja WonakaYamma	12 12 12 13 12 12 12 12 12 12 12 12
Maru	150	Maru Bingi Dan Sadau YarGaladima	Kadauri Jabaka Lugga Markau Dan Marke Bingi Mai Tukunya Yar Kura Dan sadau Kwakwaci Hannutara	13 13 13 13 13 13 12 12 12 12 12
Tsafe	170	Bilbis Keta Magazu Chediya	Yar Tasha Wanzamai Kucheri UnguwarRogo Dan Jibga Nasarawa Kizara Magazawa GidanGiye UnguwarChida Dan mane KwareKwabri SaukiyaDutse	12 14 14 14 14 14 14 14 14 14 14 14 16
TOTAL	**600**			**600**

Source: Field Survey, 2016

Table 2: Cost and Return of the Participating and Non-Participating Farmers in the ZACAREP Program

Amount (₦)	Participating Farmer			Non Participating Farmer			t-value	Sig. (2-tailed)
	Std. Deviation	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean		
Cost of Seeds (₦)	3182.2	1316.9	83.3	2938.8	1320.9	83.5	2.063	0.04**
Cost of Herbicides (₦)	3578.4	2357	149.1	3163.5	1852.9	117.2	2.188	0.029**
Cost of Fertilizer(₦)	15127.5	10018.3	633.6	12541.1	19265.6	649.3	2.851	0.005***
Insurance premium (₦)	1276	168.3	10.6					
Cost of Insecticides (₦)	2976.4	2816	178.1	2553.9	1849.7	117	1.983	0.048**
Cost of Ploughing(₦)	6659.9	3718.9	235.2	5753.6	3437.7	217.4	2.83	0.005***
Cost of Harrowing (₦)	4532.7	862.5	54.6	4596.8	864	54.6	-0.83	0.407
Cost of Planting(₦)	3077.9	2280.8	144.2	2737.5	2246.8	142.1	1.681	0.093*
Cost of Herbicides appl. (₦)	2043.1	2352.9	148.8	1972.4	2403.7	152	0.332	0.74
Cost of Fertilizer appl. (₦)	4790.9	2914.3	184.3	4077.8	2677.1	169.3	2.849	0.005***
Cost of Harvesting(₦)	4921.2	1524.6	96.4	4635.6	1500.3	94.9	2.111	0.035**
Cost of Threshing(₦)	6500	3022.5	191.2	3081.1	3026.5	191.4	0.078	0.938
Cost of Empty sacks (₦)	3575.6	2123.8	134.3	3660	1595.3	100.9	-0.502	0.616
Others (₦)	4737.1	3426.4	216.7	4520.6	3226.7	204.1	0.727	0.467
Total Cost(₦)	66978.9	389.3	2456	36232.7	4356	12839	2.324	0.025**
Mean Price per bag(₦)	6500	1689	12890	4500	2134	18920	1.998	0.051**
Output in bags	32.8	8.5	0.6	24.3	8.5	0.5	1.989	0.052**
Output in 100(kg) bag	3281.2	875.2	55.4	2728.8	848.2	53.6	1.988	0.062*
Gross sales per Ha (₦)	213200	1714.4	1076.1	97570.6	15682.8	991.9	3.444	0.000***
Cost and Return(₦)	146221.1	2178	4128	41337.9	3289	89234	2.945	0.0058***

Source: field survey data, 2016. *= P<10, *=P<0.05 ***=P<0.01

Table 3: Distribution of Participating and Non-Participating Farmers Based ON the Level of Farming Activities Covered by ZACAREP

	Participating Farmer		Non Participating Farmer	
Variables	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Fertilizer application				
No	6	2.4	13	5.2
Yes	244	97.6	237	94.8
Type of Fertilizer Used				
Organic	7	2.8	14	5.6
Inorganic	19	7.6	30	12
Both	224	89.6	206	82.4
Inorganic used				
NPK	130	52	154	61.6
SSP	2	0.8	1	0.4
NPK and SSP	12	4.8	21	8.4
NPK and Urea	106	42.4	74	29.6
Organic Applied				
Compost	30	12	40	16
Farm Yard Manure	77	30.8	103	41.2
Poultry manure	34	13.6	30	12
Tine of fertilizer application				
Before Planting	66	26.4	50	20
After 3 Leaves Stage	124	49.6	127	50.8
At Full Vegetative stage	60	24	73	29.2
Pest observed				
No	26	10.4	31	12.4
Yes	224	89.6	219	87.6
Type of Damage by Insect				
Eat Leaves	126	50.4	127	50.8
Suck the plant Pod	6	2.4	7	2.8
Both	118	47.2	116	46.4
Noticed Pest at Flowering				
No	24	9.6	31	12.4
Yes	226	90.4	219	87.6
Spray Insect				
No	115	46	135	46
Yes	135	54	115	54

Treat Seeds When Stored				
Aflastoxin	79	31.6	73	29.2
Acetelic	69	27.6	48	19.2
Others	4	1.6	8	3.2
None	98	39.2	121	48.4

Source: Field data survey, 2016

Table 4: Channels for Transfer Technologies to the Soybean Farmers Under ZACAREP

Variables	Category	Frequency	Percentage
Extension Agent Contact	Once Weekly	135	54.0
	Once fortnightly	79	31.6
	Monthly	33	13.2
	Not at all	3	1.2
Methods of Contact	Individual Method	121	48.4
	Group Method	61	24.4
	Mass Method	9	3.6
	Demonstration Method	1	0.4
	Combination of Methods	58	23.2
Message Discussed	Seed Dressing	8	3.2
	Used for Improved Seed	12	4.8
	Recommended Seed Rate	3	1.2
	Planting Method	1	0.4
	Fertilizer Application	2	0.8
	Other Specify	61	24.4
	All	163	65.2
A seed source	ZACAREP	204	81.6
	Ministry of Agriculture	13	5.2
	ADP	15	6.0
	Open Market	10	4.0
	Previous Harvest	7	2.8
	Friends	1	0.4
	Seed dealer		
Any EA in your community	Yes	246	98.4
Any MTP in your community	Yes	243	97.2
Field days attended	Once	110	44.0
	Twice	74	29.6
	Many Times	66	26.4
Training attended	Once a Year	137	54.8
	Twice a Year	18	7.2
	Many Times	95	38.0
Radio Program	No	5	2.2
	Yes	245	98

Source: Field survey data 2016

Table 5: Distribution of Respondents Based on Soybean Yield

Yield Class	Participating Farmers		Non Participating Farmers	
	Frequency	Percentage	Frequency	Percentage
500 - 1000Kg per hectare				
1001 - 1200kg per hectare	1	.4	3	1.2
1201 - 1400kg per hectare	3	1.2	171	68.4
1401 - 1600kg per hectare	13	5.2	76	30.4
1601 - 1800kg per hectare	152	60.8		
1801 - 2000kg per hectare	59	23.6		
2001- 2200kg per hectare	12	4.8		
h. Above 2200kg per hectare	10	4.0		

Total	**250**	**100.0**	**250**	**100**

Source: field survey 20116

Table 6: Constraints Expressed by Extent to Which Factors Limited Soybean Production

Participating Farmers						
Variables	**Very Effective**	**Effective**	**Some What Effective**	**Not Effective**	**Weighted Sum**	**Weighted Average**
Non Available Seed	32	60	21	137	487	1.95
High Cost	33	60	26	131	495	1.98
High Cost of Labour	27	70	67	86	538	2.15
Poor Soil Fertility	40	62	73	75	567	2.27
Problem of Pest	34	68	70	78	558	2.23
Diseases Problem	36	60	72	82	550	2.20
Cost of Buying Pest, _Herb.	30	63	36	121	502	2.01
Land Size	28	57	50	115	498	1.99
Sex	33	51	34	132	485	1.94
Age	33	51	26	140	477	1.91
Market Knowledge	35	54	36	125	499	2.00

Table 7: Constraints Expressed by Extent to Which Factors Limited Soybean Production

Non-Participating Farmers						
Variables	**Very effective**	**Effective**	**Some what effective**	**Not effective**	**Weighted Sum**	**Weighted Average**
Non Available Seed	38	58	30	124	510	2.04
High Cost	39	62	41	108	532	2.13
High Cost of Labour	35	66	94	55	581	2.32
Poor Soil Fertility	37	62	101	50	586	2.34
Problem of Pest	36	62	104	48	586	2.34
Diseases Problem	42	55	111	42	597	2.39
Cost of Buying Pest_ Herb	33	59	57	101	524	2.10
Land Size	33	56	53	108	514	2.06
Sex	36	55	32	127	500	2.00
Age	34	59	26	131	496	1.98
Market Knowledge	42	57	50	101	540	2.16

Source: Field data survey, 2016